



4.3 Air Quality

This section identifies and analyzes the potential air quality impacts associated with the proposed Project. The information and analysis in this document are organized in accordance with the checklist in Appendix G of the California Environmental Quality Act (CEQA) Guidelines and current State and local guidance. Refer to Appendix C, Tech Memo: Air Quality and Greenhouse Gas Analysis, prepared by Ascent 2/14/2020, for the assumptions used in this analysis.

4.3.1 Regulatory Framework

The following federal, State, and local regulations have been added or updated since certification of the 2011 General Plan EIR.

FEDERAL

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish the U.S. National Ambient Air Quality Standards (NAAQS). As shown in Table 4.3-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also requires each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. Individual SIPs are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.



**Table 4.3-1
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California (CAAQS) ^{a,b}	National (NAAQS) ^c	
			Primary ^{b,d}	Secondary ^{b,e}
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	— ^e	Same as primary standard
	8 Hours	0.070 ppm (137 µg/m ³)	0.070 ppm (147 µg/m ³)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Same as primary standard
	8-hour	9 ppmf (10 mg/m ³)	9 ppm (10 mg/m ³)	
Nitrogen dioxide (NO ₂)	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	53 ppb (100 µg/m ³)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	—
Sulfur dioxide (SO ₂)	24-hour	0.04 ppm (105 µg/m ³)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	—
Respirable particulate matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	—	Same as primary standard
	24-hour	50 µg/m ³	150 µg/m ³	
Fine particulate matter (PM _{2.5})	Annual arithmetic mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
	24-hour	—	35 µg/m ³	Same as primary standard
Lead f	Calendar quarter	—	1.5 µg/m ³	Same as primary standard
	30-Day average	1.5 µg/m ³	—	—
	Rolling 3-Month Average	—	0.15 µg/m ³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m ³)	No national standards	
Sulfates	24 Hour	25 µg/m ³		
Vinyl chloride f	24-hour	0.01 ppm (26 µg/m ³)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		



Notes: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million (by volume).

- a. California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2 , particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- b. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius ($^{\circ}\text{C}$) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- c. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. The $\text{PM}_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
- d. National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- e. National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- f. The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. This allows for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: EPA 2016 and CARB 2016a

Toxic Air Contaminants/Hazardous Air Pollutants

Toxic Air Contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs) are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which ambient standards have been established (See Table 1 of Appendix C). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum achievable control technology or best available control technology (BACT) for toxics to limit emissions.



STATE

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act) (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate BACT for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel PM control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

South Coast Air Quality Management District

SCAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in the South Coast Air Basin (SCAB). SCAQMD periodically updates the Air Quality Management Plan (AQMP) which is submitted to be included in the State SIP (SCAQMD 2017). The SIP is a compilation of plans and regulations that govern how the



region and State will comply with the CAA requirements to attain and maintain the NAAQS for ozone and PM_{2.5}.

Criteria Air Pollutants

SCAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. After SCAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SCAQMD who submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects under the proposed Project would be subject to adopted SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of land uses anticipated under the proposed Project may include but are not limited to the following:

- **Regulation II, Rule 201:** Permit to Construct. A person shall not build, erect, install, alter, or replace any equipment permit unit, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. A permit to construct shall remain in effect until the permit to operate the equipment for which the application was filed as granted or denied, or the application is canceled.
- **Regulation II, Rule 203:** Permit to Operate. A person shall not operate or use any equipment permit unit, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit to operate from the Executive Officer.
- **Regulation IV, Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- **Regulation IV, Rule 403:** Fugitive Dust. The developer or contractor is required to implement Best Available Control Measures for all sources, and all forms of visible PM are prohibited from crossing any property line.
- **Regulation XI, Rule 1113:** Architectural Coatings. The manufacturer, distributor, and end user of architectural and industrial maintenance coatings to reduce



volatile organic compounds (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- **Regulation XII, Rule 1186:** PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations. The purpose of this rule is to reduce the amount of PM entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads.
- **Regulation XIII, Rule 1301:** New Source Review, General. The purpose of this rule is to set forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the NAAQS, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.
- **Regulation XIV, Rule 1401:** New Source Review of Toxic Air Contaminants. The rule specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants.
- **Regulation XIV, Rule 1403:** Asbestos Emissions from Demolition/Renovation Activities. The owner or operator of any demolition or renovation activity is required to have an asbestos study performed prior to demolition and to provide notification to SCAQMD prior to commencing demolition activities.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures for TACs. Under SCAQMD Rule 201 ("Permit to Construct"), Rule 203 ("Permit to Operate"), Rule 1301 ("New Source Review, General"), Rule 1401 ("New Source Review of Toxic Air Contaminants"), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to operations that emit TACs if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints



to local governments and SCAQMD. SCAQMD's Rule 402 (Nuisance) regulates odorous emissions.

Climate Action Plan

The City of Murrieta has initiated a Climate Action Plan (CAP) update because of several important changes that have occurred at the State and regional level since the 2011 CAP was prepared. Senate Bill (SB) 32, signed into law in 2016, established a statewide GHG reduction target of 40 percent below 1990 levels by 2030. In November 2017, the California Air Resources Board (CARB) published the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the 2030 target established by SB 32.

Additionally, the cities of Western Riverside County, through the Western Riverside Council of Governments (WRCOG) have established a common framework to allow for a commonality of regional climate action objectives known as the Subregional Climate Action Plan (Subregional CAP). The congruent CAP Update would make the City's CAP consistent with State GHG reduction targets and relevant guidance contained in the WRCOG Subregional CAP completed in September 2014.

The measures provided in the CAP update were primarily developed to reduce GHG emissions within the City of Murrieta, but they also result in benefits such as, improvements in traffic congestions, air quality, water supply, public health, and infrastructure.

4.3.2 Environmental Setting

The proposed Project site is located in the SCAB. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources. However, regional air quality concentration data which has been updated since the 2011 General Plan EIR is discussed below.

Criteria Air Pollutants

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. Ozone, PM₁₀, and PM_{2.5} are the criteria air pollutants of primary concern in this analysis due to their nonattainment status with respect to the applicable NAAQS and/or CAAQS in the SCAB. Brief descriptions of these key criteria air pollutants in the SCAB and their health effects are provided below. Emission source types and health effects are summarized in Table 4.3-2. The attainment status of each criteria air pollutant with respect to the NAAQS and the CAAQS in the SCAB is provided in Table 4.3-3.



Table 4.3-2
Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute ¹ Health Effects	Chronic ² Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NOX in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NOX results from the combustion of fuels	increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	headache, dizziness, fatigue, nausea, vomiting, death	permanent heart and brain damage
Nitrogen dioxide (NO ₂)	combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	chronic bronchitis, decreased lung function
Sulfur dioxide (SO ₂)	coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO ₂ exposure to chronic health impacts
Respirable particulate matter (PM ₁₀), Fine particulate matter (PM _{2.5})	fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO ₂ and ROG	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	alterations to the immune system, carcinogenesis
Lead	metal processing	reproductive/ developmental effects (fetuses and children)	numerous effects including neurological, endocrine, and cardiovascular effects

Notes: NOX = oxides of nitrogen; ROG = reactive organic gases.

1. "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.
2. "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Sources: EPA 2016



**Table 4.3-3
Attainment Status Designations for South Coast Air Basin**

Pollutant	National Ambient Air Quality Standard	California Ambient Air Quality Standard
Ozone	Nonattainment (1-hour) Classification=Extreme	Nonattainment (1-hour)
	Nonattainment (8-hour)1 Classification=Extreme	Nonattainment (8-hour)
	Nonattainment (8-hour)2 Classification=Extreme	
Respirable particulate matter (PM ₁₀)	Attainment (24-hour) Classification = Maintenance	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter (PM _{2.5})	Nonattainment (24-hour) Classification = Serious	(No State Standard for 24-Hour)
	Nonattainment (Annual) ³	Nonattainment (Annual)
	Nonattainment (Annual) ⁴ Classification = Serious	
Carbon monoxide (CO)	Attainment (1-hour) Classification=Maintenance	Attainment (1-hour)
	Attainment (8-hour) Classification=Maintenance	Attainment (8-hour)
Nitrogen dioxide (NO ₂)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Attainment (Annual) Classification=Maintenance	Attainment (Annual)
Sulfur dioxide (SO ₂)	(Designation Pending) (1-Hour)	Unclassifiable/Attainment (1-hour)
		Unclassifiable/Attainment (24-hour)
Lead (Particulate)	Nonattainment (3-month rolling avg.) Classification=Partial	Attainment (30-day average)
Hydrogen Sulfide	No Federal Standard	Attainment (1-hour)
Sulfates		Unclassifiable (24-hour)
Notes: 1. 1997 Standard. 2. 2008 Standard. 3. 1997 Standard. 4. 2012 Standard.		
Source: SCAQMD 2016		

Monitoring Station Data and Attainment Designations

Criteria air pollutant concentrations are measured at several monitoring stations in the SCAB. The Lake Elsinore, Perris, and Riverside-Rubidoux's average air quality data best represents the project area with recent data for ozone, PM₁₀, and PM_{2.5}. Table 4.3-4 summarizes the air quality data from the most recent three years (2016–2018).

Both CARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized in Table 4.3-3 above).



Table 4.3-4
Summary of Annual Data on Ambient Air Quality (2016-2018)

	2016	2017	2018
Ozone			
Maximum concentration (1-hr/8-hr avg, ppm)	0.124/0.093	0.121/0.098	0.116/0.095
Number of days state standard exceeded (1-hr/8-hr)	15/*	23/*	16/*
Number of days national standard exceeded (1-hr/8-hr)	0/44	0/54	0/30
Fine Particulate Matter (PM_{2.5})			
Maximum concentration (24-hour µg/m ³)	51.5	50.3	66.3
Number of days national standard exceeded (24-hour measured)	5	7	3
Respirable Particulate Matter (PM₁₀)			
Maximum concentration (µg/m ³)	76.0	75.4	64.4
Number of days state standard exceeded	5	11	2
Number of days national standard exceeded	0	0	0
Notes: µg/m ³ = micrograms per cubic meter; ppm = parts per million; * = Data not available; Ozone (O ₃) measurements from Lake Elsinore-W Flint Street Monitoring Station. Fine particulate matter (PM _{2.5}) from the Riverside-Rubidoux Monitoring Station. Respirable particulate matter (PM ₁₀) measurements from Perris Monitoring Station.			
Source: CARB 2019			

Toxic Air Contaminants

According to the California Almanac of Emissions and Air Quality (CARB 2013), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).



With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Odor sources of concern can include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants.

Existing Emissions Sources

The 2011 General Plan EIR summarized emissions of criteria air pollutants and ozone precursors within the City for various source categories in 2008. Table 4.3-5, 2011 General Plan Summary of 2035 Estimated Emissions Inventory for the City of Murrieta, summarizes the emissions for area, mobile, and indirect source categories. According to the emissions inventory, mobile sources account for the greatest contribution to the estimate annual average emissions of air pollutants.



Table 4.3-5
2011 General Plan Summary of 2035 Estimated Emissions Inventory for the City of Murrieta

Source Type	Estimated Annual Average Emissions (Tons/Year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources						
Natural Gas Combustion	14.23	188.52	109.40	0.00	0.35	0.35
Landscaping Equipment	48.10	3.02	267.22	0.01	0.71	0.70
Consumer Products	416.47	-	-	-	-	-
Architectural Coatings	78.67	-	-	-	-	-
Subtotal (Area Sources)	557.47	191.54	376.62	0.01	1.06	1.05
Indirect Sources						
Energy Consumption	4.47	514.00	0.09	53.70	17.90	-
Water Conveyance	0.11	12.60	2.20	1.32	0.44	-
Subtotal (Indirect Sources)	4.58	526.60	2.29	55.02	18.34	0.00
Mobile Sources (by land use category)						
Single Family Housing	425.40	594.36	5,090.88	5.76	992.57	193.26
Multifamily Housing	115.60	156.97	1,344.52	1.52	262.14	51.04
High School [civic/institutional]	18.14	26.37	217.64	0.25	43.98	8.55
City Park	8.81	8.80	72.34	0.08	14.66	2.85
Strip Mall	918.75	1,400.62	11,486.63	13.38	2,331.08	453.11
Professional Office	246.53	354.02	2,972.14	3.43	593.68	115.48
Office Park [business park]	180.87	560.13	2,200.81	2.53	437.33	85.09
General Light Industrial	15.17	21.00	177.83	0.20	35.31	6.87
Subtotal (Mobile Sources)	1,929.27	3,122.27	23,562.79	27.15	4,710.75	916.25
TOTAL	2,491.32	3,840.41	23,941.70	82.18	4,730.15	917.30
Notes: Tons/year = tons per year; ROG = reactive organic gases; NO _x = oxides of nitrogen; CO = carbon monoxide; SO _x = sulfur dioxide; PM ₁₀ = respirable particulate matter; PM _{2.5} = fine particulate matter						
Source: City of Murrieta 2011						

Sensitive Receptors

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants. Sensitive receptors mentioned in the 2011 General Plan EIR are consistent with the proposed Project.



4.3.3 Significance Threshold Criteria

Methodology

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors were assessed in accordance with SCAQMD-recommended methodologies. Attachment A of the Draft Tech Memo: Air Quality and Greenhouse Gas Impact Analysis (Appendix C) provides modeling and emissions calculations according to SCAQMD guidelines. Potential impacts from construction were assessed qualitatively as the specific duration, frequency, and intensity of construction activities that could occur under the proposed Project are known at this time. Operations of the proposed Project land use changes were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program, as recommended by SCAQMD. Plan-specific information, where available, and default values according to land use type and location in CalEEMod were used to model the net change of operational emissions. Mobile-source emissions were also modeled in CalEEMod using the net vehicle miles traveled (VMT) as provided in the VMT analysis provided in the Vehicle Miles Travel (VMT) Analysis by VRPA Technologies, Inc. on August 16, 2019 (Appendix G). Emissions associated with consumption of energy (electricity and natural gas), the use of consumer products, and landscape maintenance activities were estimated using the applicable modules in CalEEMod. Operational emissions from all sources were estimated for full buildout of the proposed Project which is anticipated to occur by 2035.

TACs and mobile source CO impacts were assessed qualitatively, using the screening criteria set forth by SCAQMD and CARB and results from the VMT Analysis by VRPA Technologies, Inc.

The assessment of odor-related impacts is based on the types of odor sources associated with the land uses that would be developed under the project and their location relative to existing off-site sensitive receptors.

Thresholds of Significance

The Initial Study Environmental Checklist, Appendix G of the CEQA Guidelines, was used as the significance criteria in the 2011 General Plan EIR. Since the 2011 General Plan EIR was certified, Appendix G has been updated. A project would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.



Appendix G of the CEQA Guidelines states that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make these determinations. SCAQMD's mass daily significance thresholds for both construction and operation of the project are provided in the 2011 General Plan EIR (See Table 5.5-5, page 5.5-14 of the 2011 General Plan EIR) and have not changed for the purpose of this analysis. Thus, the air quality impact analysis for the proposed Project relies on SCAQMD's significance criteria.

4.3.4 Project Impacts and Mitigation Measures

□ THE PROPOSED PROJECT MAY CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN

Level of Significance Before Mitigation: Less Than Significant Impact.

Impact Analysis: The 2011 General Plan EIR identified a less than significant impact regarding its consistency with other regional plans due to its goals and policies falling under the same objectives as other plans. The two criteria required by SCAQMD for evaluation of plan consistency analyzed in the 2011 General Plan are relevant to this analysis and discussed below.

Criterion 1

The first criterion requires projects to forecast emissions contributing to air quality violations and attainment. As mentioned in the 2011 General Plan, all future development is required to comply with SCAQMD regulations and permitting requirements. In addition, all developments would be subject to the goals and policies in the 2011 General Plan to help reduce air quality impacts. Because project-level construction details are not provided for this plan-level analysis, construction emissions are not able to be analyzed at the level of detail needed to determine whether they would contribute to an air quality violation. Operational emissions were determined to be less than significant and would not contribute to an air quality violation or deter attainment. As previously stated, individual project construction and operational project under the proposed Project would be required to comply with its goals and policies and SCAQMD regulations.

Criterion 2

Under the second criterion, SCAQMD considers a project to be consistent with existing air quality plans and other relevant documents if the project's land use changes and growth rates remain consistent with those in the existing plan. Projects that do not increase dwelling unit density, vehicle trips, or VMT above the projected rates included in relevant air quality plans are not considered to exceed this threshold (SCAQMD 1993). The most relevant and applicable air quality plans for the SCAB are SCAQMD's 2016 AQMP and SCAG's 2016 Regional Transportation Plan/Sustainable Communities



Strategy (RTP/SCS). Regional air quality emissions projections used in the SIP and the AQMP are based on the growth projections included in the RTP/SCS. Therefore, projects that are consistent with these growth projections would also be consistent with regional air quality emissions projections and attainment status regarding CAAQS and NAAQS.

The proposed Project includes changes to the land uses upon which the AQMP and 2016 RTP/SCS were based. However, the focus of the proposed Project is to create a job to housing balance that would create jobs and reduce the VMT within the City which is consistent with the goals of the RTP/SCS plan. Like the 2011 General Plan, the proposed Project includes several updated goals and policies within the Circulation, Land Use, Air Quality, Conservation, and Safety Elements pertaining to regional mobility, reduced vehicle trips, energy efficiency, smart land use patterns, and emergency management, which are consistent with SCAG's RTP goals and Compass Growth Visioning Regional Growth Principles. Furthermore, operational emissions would be lower under the proposed Project relative to the 2011 General Plan and would reduce the contribution towards an air quality violation or attainment. Additionally, all future development is required to comply with the goals and policies that would reduce air quality impacts. Therefore, the proposed Project would comply with applicable regional plans and would be considered less than significant in this regard.

Mitigation Measures: Not Applicable

Level of Significance After Mitigation: Not Applicable

- ☐ **IMPLEMENTATION OF THE PROPOSED PROJECT COULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD**

SHORT-TERM CONSTRUCTION EMISSIONS

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: The proposed Project would allow for development of an additional 1,572 residential units, beyond those considered in the 2011 General Plan. Construction of these 1,572 new residential units under the proposed Project would result in a net increase in emissions beyond those analyzed for the 2011 General Plan. Construction-related activities associated with the implementation of the proposed residential units would generate emissions of ROG, NO_x, SO_x, CO, PM₁₀, and PM_{2.5} from site preparation; use of off-road construction equipment; material handling; on-road vehicle trips; architectural coating; paving; and other construction-related activities.



As was the case with the 2011 General Plan, the proposed Project is program-level in nature and therefore, specific information about individual land use developments, and the duration, frequency, and intensity of construction, and potential overlap between construction activities is not available at this time. Therefore, construction-related emissions due to the implementation of the proposed Project cannot be accurately quantified, and such an analysis would be considered speculative. In addition, the proposed Project would reduce 2,405,601 square feet of non-residential development in the City. From time of adoption of the proposed Project to buildout year 2035, construction projects would occur throughout the City and would be dependent upon factors such as the nature and quantity of projects initiated by developers and approvals by the City, thus the timing, rate, and level of future construction emissions emitted cannot be precisely anticipated under the general provisions of the proposed Project.

As stated in the 2011 General Plan EIR Section 5.5.4, all goals and policies related to reducing criteria air pollutants and precursors (AQ-3.1 – AQ-3.4 and AQ-7.1 – AQ-7.4) would be required to be addressed in all construction projects within the City (page 5.5-16). However, even with implementation of the 2011 General Plan goals and policies, the proposed Project construction projects could have the potential to exceed SCAQMD construction thresholds. Ambient air quality standards are established to be protective of public health and if exceeded could expose receptors to adverse health impacts. Because implementation of the proposed Project has the potential to exceed SCAQMD's construction thresholds, the proposed Project could exacerbate or interfere with the region's ability to attain the health-based standards. Therefore, construction-related air quality impacts would be potentially significant for the proposed Project, consistent with the potentially significant impact identified in the 2011 General Plan EIR.

Mitigation Measures:

- AQ-1 Require the use of Tier 4 emissions standards or better for off-road diesel-powered construction equipment of 50 horsepower or greater. To ensure that Tier 4 construction equipment or better will be used during the proposed Project's construction, SCAQMD staff recommends that the Lead Agency include this requirement in applicable bid documents, purchase orders, and contracts. Successful contractor(s) must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities. A copy of each unit's certified tier specification or model year specification and California Air Resources Board (CARB) or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment. Additionally, the Lead Agency should require periodic reporting and provision of written construction documents by construction contractor(s) to ensure compliance and conduct regular inspections to the maximum extent feasible to ensure compliance.
- AQ-2 Require zero-emissions or near-zero emission on-road haul trucks such as heavy-duty trucks with natural gas engines that meet the CARB's adopted



optional NO_x emissions standard at 0.02 grams per brake horsepower-hour (g/bhp-hr), if and when feasible. At a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export) that meet CARB's 2010 engine emissions standards at 0.01 g/bhp-hr of particulate matter (PM) and 0.20 g/bhp-hr of NO_x emissions or newer, cleaner trucks. The Lead Agency should include this requirement in applicable bid documents, purchase orders, and contracts. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards, and make the records available for inspection. The Lead Agency should conduct regular inspections to the maximum extent feasible to ensure compliance.

- AQ-3 Suspend all on-site construction activities when wind speeds (as instantaneous gusts) exceed 25 miles per hour.
- AQ-4 All trucks hauling dirt, sand, soil or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with California Vehicle Code Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- AQ-5 Enter into applicable bid documents, purchase orders, and contracts to notify all construction vendors, contractors, and/or haul truck operators that vehicle and construction equipment idling time will be limited to no longer than five minutes, consistent with the CARB's policy. For any idling that is expected to take longer than five minutes, the engine should be shut off. Notify construction vendors, contractors, and/or haul truck operators of these idling requirements at the time that the purchase order is issued and again when vehicles enter the proposed Project site. To further ensure that drivers understand the vehicle idling requirement, post signs at the proposed Project site, where appropriate, stating that idling longer than five minutes is not permitted.
- AQ-6 Have truck routes clearly marked with trailblazer signs, so that trucks will not enter residential areas.
- AQ-7 Limit the daily number of trucks allowed at the proposed Project to levels analyzed in the CEQA document. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the proposed Project through the CEQA process prior to allowing this land use or higher activity level.

Level of Significance After Mitigation: Through adherence with the goals and policies from the 2011 General Plan stated above, as well as the Mitigation Measures (AQ-1 through AQ-7), the proposed Project would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact in



terms of construction-related air quality impacts. However, even with implementation of the 2011 General Plan goals and policies, the proposed Project's construction projects could have the potential to exceed SCAQMD construction thresholds. Therefore, similarly to the 2011 General Plan, the proposed Project would result in a Significant Unavoidable Impact in this regard.

LONG-TERM MOBILE AND STATIONARY SOURCE EMISSIONS

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis: Operation of the proposed 1,572 residential units would result in the generation of long-term operational emissions of ROG, NO_x, PM₁₀, PM_{2.5}, SO_x and CO. The non-residential development excluded from the 2011 General Plan would avoid the generation of long-term operational emissions. The addition of residential units would serve to increase emissions beyond those analyzed in the 2011 General Plan EIR, while the reduction in allowable non-residential development would reduce emissions from the same analysis. In addition to the land use changes, citywide VMT was assessed to determine the change in VMT from the two General Plan scenarios. The net 2035 citywide VMT under the 2011 General Plan compared to the proposed Project, provided by VRPA Technologies, Inc. (Appendix G), was estimated to be a decrease of 93,028 miles. This decrease in VMT is due to the proposed increase in residential units to be oriented toward employment area, reducing the VMT to and from residences and places of employment.

Additional sources of operational emissions evaluated for this study include the use of electricity and natural gas; landscape maintenance equipment such as mowers and leaf blowers; application of architectural coatings as part of regular maintenance; and the use of various consumer products such as cleaning chemicals that would also generate emissions of ROG. Because building energy efficiency is unknown for build out year 2035, energy emissions were modeled conservatively based on 2019 Title 24 standards. Table 4.3-6 summarizes the net change in maximum daily operations-related emissions of criteria air pollutants and precursors from the land uses proposed under the proposed Project.



**Table 4.3-6
Net Emissions of General Plan Update**

Source Type	Estimated Maximum Daily Emissions (lb/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
General Plan Update: Net Residential Unit Increase						
Area	38	1	129	<1	1	1
Energy	<1	4	2	<1	<1	<1
Subtotal	38	6	131	<1	1	1
General Plan Update: Net Non-Residential Land Use Decrease						
Area	-54	- <1	- <1	- <1	- <1	- <1
Energy	-2	-18	-15	-- <1	-1	-1
Subtotal	-56	-18	-15	- <1	-1	-1
General Plan Update: Net Mobile Decrease						
Subtotal	-10	-77	-120	-1	-71	-19
General Plan Update Net TOTAL	-27	-89	-4	-1	-71	-19
SCAQMD Thresholds of Significance	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Notes: lb/day = pounds per day; ROG = reactive organic gases; NO _x = oxides of nitrogen; CO = carbon monoxide; SO _x = sulfur dioxide; PM ₁₀ = respirable particulate matter; PM _{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District.						

Table 4.3-6 shows that the proposed Project would decrease overall citywide emissions relative to overall development under the 2011 General Plan. However, the reduction in emissions would not reduce overall operations emissions to below SCAQMD's significance threshold. Furthermore, the land uses proposed under the proposed Project with the increase in residential units, decrease in nonresidential square footage, and decrease in VMT would contribute to nonattainment designations.

If the proposed Project exceeds SCAQMD's thresholds and contributes to nonattainment designations, it would exacerbate or interfere with the region's ability to attain the health-based standards. Thus, the exposure of criteria air pollutants that may exceed the NAAQS and CAAQS would exacerbate health impacts. Full buildout of the proposed Project's land uses would cause emissions to exceed SCAQMD's recommended thresholds, thus violating air quality standards and would contribute substantially to an existing or projected air quality violation. Because the ambient air quality standards are established to be protective of public health, adverse health impacts to receptors are anticipated due to the project's emissions being above SCAQMD's thresholds. As individual developments anticipated under the proposed Project are evaluated, potential impacts to nonattainment levels and health risk may be found to not be significant.

In addition to the goals and policies identified in the 2011 General Plan (AQ-1.1 – AQ-1.5, AQ-2.1 – AQ-2.5, AQ-4.1 – AQ-4.4, AQ-5.1 – AQ-5.7, AQ-6.1, AQ-6.3 – AQ-6.7, AQ-7.1, AQ-7.3, LU-8.1, LU-8.2, CIR-1.4, CIR-5.9 – CIR-5.12, and CIR-6.1 – CIR-6.12), the proposed Project provides revised and/or new goals that are applicable to reducing



operations-related emissions. Land Use policies LU-7.9 through 7.10 provides residents with access to other land uses. Policies LU-17.3 through 17.6 encourage mixed-use development that provide various sources to the community. Circulation policy CIR-6.15 encourage adoption of VMT measurement for CEQA evaluations.

Therefore, for this program level analysis, mobile and stationary source emissions impacts would be potentially significant for the proposed Project, consistent with the potentially significant impact identified in the 2011 General Plan EIR.

Mitigation Measures:

- AQ-8 Provide electric vehicle (EV) Charging Stations (see the discussion below regarding EV charging stations).
- AQ-9 Should the proposed Project generate significant regional emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in health risks, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Draft SEIR, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce any significant adverse air quality impacts. SCAQMD staff is available to discuss the availability of current and upcoming truck technologies and incentive programs with the Lead Agency.
- AQ-10 Trucks that can operate at least partially on electricity have the ability to substantially reduce the significant NOx impacts from this project. Further, trucks that run at least partially on electricity are projected to become available during the life of the project as discussed in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS). It is important to make this electrical infrastructure available when the project is built so that it is ready when this technology becomes commercially available. The cost of installing electrical charging equipment onsite is significantly cheaper if completed when the project is built compared to retrofitting an existing building. Therefore, SCAQMD staff recommends the Lead Agency require the proposed Project and other plan areas that allow truck parking to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in. Similar to the City of Los Angeles requirements for all new projects, SCAQMD staff recommends that the Lead Agency require at least 5% of all vehicle parking spaces (including for trucks) include EV charging stations. Further, electrical hookups should be provided at the onsite truck stop for truckers to plug in any onboard auxiliary equipment. At a minimum, electrical panels should be appropriately sized to allow for future expanded use.



- AQ-11 Design warehouses or distribution centers such that entrances and exits are such that trucks are not traversing past neighbors or other sensitive receptors.
- AQ-12 Design warehouses or distribution centers such that any check-in point for trucks is well inside the site to ensure that there are no trucks queuing outside of the facility.
- AQ-13 Design warehouses or distribution centers to ensure that truck traffic within the site is located away from the property line(s) closest to its residential or sensitive receptor neighbors.
- AQ-14 Restrict overnight parking in residential areas.
- AQ-15 Establish overnight parking within warehouses or distribution centers where trucks can rest overnight.
- AQ-16 Establish area(s) within warehouses or distribution centers for repair needs.
- AQ-17 Develop, adopt and enforce truck routes to and from warehouses or distribution centers that avoid sensitive receptors, where feasible.
- AQ-18 Create a buffer zone of at least 300 meters (roughly 1,000 feet), which can be office space, employee parking, greenbelt, etc. between warehouses or distribution centers and sensitive receptors.
- AQ-19 Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or on the proposed Project site to generate solar energy for the facility.
- AQ-20 Maximize the planting of trees in landscaping and parking lots.
- AQ-21 Use light colored paving and roofing materials (e.g., “cool” roofs and “cool” pavements).
- AQ-22 Utilize only Energy Star heating, cooling, and lighting devices, and appliances.
- AQ-23 Require use of electric or alternatively fueled sweepers with HEPA filters.
- AQ-24 Use of water-based or low VOC cleaning products.



Level of Significance After Mitigation: Through adherence with the goals and policies from the 2011 General Plan and the proposed Project, as well as the Mitigation Measures stated above (AQ-8 through AQ-24), the proposed Project would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact in terms of mobile and stationary source emissions. However, even with implementation of the 2011 General Plan goals and policies and new proposed Project policies, development under the proposed Project could have the potential to exceed SCAQMD thresholds. Therefore, similarly to the 2011 General Plan, the proposed Project would result in a Significant Unavoidable Impact to long-term mobile and stationary source emissions.

□ **IMPLEMENTATION OF THE PROPOSED PROJECT COULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS**

Level of Significance Before Mitigation: Less than Significant Impact.

Impact Analysis: The exposure of sensitive receptors to TAC emissions from project-generated construction and operational sources is discussed separately below. Diesel PM is the focus of this analysis because it is the TAC of primary concern when evaluating health risk. Although other TACs exist (e.g., benzene, 1, 3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), they are primarily associated with industrial operations.

Construction

Construction-related activities associated with the project would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment use for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

Diesel PM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. According the California Office of Environmental Health and Assessment's (OEHHA's) 2015 Guidance, exposure of sensitive receptors to TAC emissions should



be based on a 30-year exposure period for estimating cancer risk at the maximum exposed individual resident (MEIR), with 9- and 70-year exposure periods at the MEIR as supplemental information. Furthermore, 70-year exposure period is required for estimating cancer burden or providing an estimate of population-wide risk (OEHHA 2015:8-1).

The use of off-road heavy-duty diesel equipment would be limited to the individual construction project under the proposed Project. Because construction details for individual project under the proposed Project are unknown, this analysis is unable to determine the dose of exposure to any one sensitive receptor. Construction projects are required to comply with the goals and policies under the 2011 General Plan, proposed Project, and SCAQMD standards and therefore no new or worse impacts would result from construction projects

Operations

The operational TAC analysis evaluates new sources associated with the proposed Project build out (e.g., increased vehicular traffic, stationary or commercial land uses) and the placement of new sensitive receptors in close proximity to existing TAC sources. The analysis is based on available guidance from CARB and SCAQMD shown below in Table 4.3-7.

**Table 4.3-7
California Air Resources Board Recommendations on Siting New Sensitive Land Uses
Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities**

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day
Distribution Centers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with TRUs operating per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points
Rail Yards	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches
Ports	<ul style="list-style-type: none"> Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a chrome



Source Category	Advisory Recommendations
	plater
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Notes: CARB = California Air Resources Board; TRU = transport refrigeration unit; vehicles/day = vehicles per day Source: CARB 2005	

Operation of new land uses could generate new sources of TACs from commercial land uses (e.g., gasoline dispensing facilities and dry cleaners). Land uses that have the potential to generate stationary source emissions would be required to obtain a permit from SCAQMD. If the facility has the potential to generate health risks above established risk levels, facilities are required to distribute public notifications to both residential, non-residential, and parents of children attending school within the area of impact and develop and implement a risk reduction plan.

In addition, the proposed Project would result in a decrease in 93,028 vehicle trips distributed over the City roadways and intersections. In accordance with CARB's Air Quality and Land Use Handbook, high volume roads and freeways are the primary sources of TACs within urban areas. Freeways or urban roads experiencing 100,000 or more vehicles/day could expose sensitive receptors to adverse health risks. It is likely under this project that freeways and roads within the project area would not exceed 100,000 vehicles/day. Because the proposed Project would result in a substantial decrease in trips to the surrounding roadway network, a substantial decrease in health risk levels associated with vehicular traffic, exposing existing and future planned land uses to decreased TAC levels. There would be no additional or worse impacts than those determined in the 2011 General Plan.

Implementation of the goals and policies included in the 2011 General Plan (AQ-1.1 – AQ-1.5, AQ-2.1 – AQ-2.5, AQ-4.1 – AQ-4.4, AQ-5.1 – AQ-5.7, AQ-6.1, AQ-6.3 – AQ-6.7, AQ-7.1, AQ-7.3, LU-8.1, LU-8.2, CIR-1.4, CIR-5.9 – CIR-5.12, and CIR-6.1 – CIR-6.12), SCAQMD's permit requirements for stationary sources, and the reduction in future citywide VMT relative to the 2011 General Plan would reduce the health risk to sensitive receptors. Therefore, the impact on sensitive receptors in regard to pollutant concentrations would be less than significant for the proposed Project.

Mitigation Measures: Not Applicable

Level of Significance After Mitigation: Not Applicable



- **IMPLEMENTATION OF THE PROPOSED PROJECT COULD RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE.**

ODOR IMPACTS

Level of Significance Before Mitigation: Less Than Significant Impact.

Impact Analysis: The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact. Though construction project details under the proposed Project are unknown, odors from the use of heavy-duty diesel equipment, and the laying of asphalt during project-related construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

The proposed land uses under the proposed Project are not considered significant odor generators that would adversely affect sensitive receptors during operations; all land uses would contain uses that are common in the surrounding areas. The goals and policies provided in the 2011 General Plan (AQ-2.1 through AQ-2.5 and AQ-6.1) would help reduce exposure of odors to sensitive receptors through land use decisions under the proposed Project. Operation of this new development would be subject to these goals and policies and shall be subject to SCAQMD Rule 402. In addition, future citywide VMT under the proposed Project would decrease relative to future citywide VMT under the 2011 General Plan, which would not increase and could reduce odors associated with on-road vehicles.

Therefore, implementation of the proposed Project would not result in exposure of a substantial number of people to objectionable odors and would be a less than significant impact.

Mitigation Measures: Not Applicable

Level of Significance After Mitigation: Not Applicable

CARBON MONOXIDE HOTSPOTS

Level of Significance Before Mitigation: Less Than Significant Impact.



Impact Analysis: Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, vehicle speed, and traffic delay. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under stable meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels adversely affecting nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. CO is a pollutant of localized concern and, therefore, analyzed at the local level. Construction activities are rarely a cause of localized CO impacts because they do not typically result in substantial traffic increases at any one location.

As discussed in the SCAQMD AQMP and seen in Table 4.3-3, the SCAB is in attainment for both 1-hour and 8-hour CO concentrations under CAAQS and NAAQS. As the AQMP notes, the SCAB gained attainment status for CO concentrations in 2007 and has remained in attainment status for this pollutant since that time. In 2015, SCAQMD measured CO concentrations at 25 locations in the SCAB as well as two locations that measured near-road CO concentrations. Maximum CO concentrations in Los Angeles County were 3.3 ppm for the 8-hour averaging time in 2015. This concentration is well below the NAAQS 1-hour and 8-hour standards (i.e., 35 ppm and 9 ppm, respectively; SCAQMD 2017). As part of the AQMP, SCAQMD also modeled future pollutant emissions within the SCAB based on population growth rates, current air quality regulations and other key factors for the year 2031. Modeling results found that although on-road mobile emissions continue to be a major contributor of CO and NOX emissions, current rules and regulations on mobile source emissions will result in a decrease in CO concentrations within the SCAB by 2031 and will not impact the attainment status for CO (SCAQMD 2017:3-19).

The 2011 General Plan determined that there would be a less than significant impact to increase mobile-source CO concentrations with its adoption. It was concluded that at full build out, no intersection in the City would experience an average daily traffic (ADT) volume that would exceed 100,000 vehicles per day under CARBS's guidance. In addition, adherence to the 2011 goal and policies CIR-1.2, CIR-1.4, CIR-1.6, and CIR-1.8 would ensure intersections would optimize traffic flow through the City and reduce traffic queuing.

The City of Murrieta Focused General Plan Update Traffic Impact Analysis report by Iteris, Inc. (Appendix E) analyzed key intersections and roadways under conditions of the proposed Project. Table 12 in the TIA report (See Appendix E) determined that no intersection capacity or roadway would exceed 100,000 vehicles per day. Therefore, the impact related to carbon monoxide hotspots would be considered less than significant for the proposed Project.

Mitigation Measures: Not Applicable



Level of Significance After Mitigation: Not Applicable

4.3.5 Cumulative Impacts and Mitigation Measures

- **REGIONAL AIR QUALITY EMISSIONS RESULTING FROM OPERATIONAL BUILDOUT OF THE PROPOSED PROJECT COULD IMPACT REGIONAL AIR QUALITY LEVELS ON A CUMULATIVELY CONSIDERABLE BASIS.**

Level of Significance Before Mitigation: Potentially Significant Impact.

Impact Analysis:

CRITERIA POLLUTANT

Construction-related emissions from future development under the proposed Project, similar to those discussed in the 2011 General Plan EIR, may be “cumulatively considerable” as they have the potential to be combined with the physical impacts of other past, present, or other probable future projects in the SCAB. If multiple large construction projects occur simultaneously in close proximity, it is possible that impacts associated with air quality violations could result from development of the project.

As described under earlier in this section, the proposed development under the proposed Project would reduce future operational emissions of criteria pollutants relative to future emissions under the 2011 General Plan. However, the overall magnitude of operational emissions at full build out of the proposed Project would contribute to the adverse air quality conditions in the SCAB. Because operations emissions could contribute to nonattainment designations and adverse health impacts to sensitive receptors, the land uses under the proposed Project would be cumulatively considerable.

SENSITIVE RECEPTORS

Exposure of TAC to sensitive receptors would be cumulative in nature if the project, in combination with other development, would expose sensitive receptors to a substantial concentration of TACs that would significant increase cancer risk, or acute or chronic health risks. As discussed under earlier in this section, although individual construction project details are unknown, the 2011 General Plan, proposed Project, and SCAQMD standards would avoid sensitive receptor exposure to TACs. In addition, the proposed Project land uses would result in a decrease in mobile source emissions and traffic concentrations would not exceed TAC thresholds. Therefore, no additional cumulative impacts would occur.

Impacts would be cumulative in nature if the project, in combination with cumulative development, would violate or contribute substantially to localized concentrations of CO



that exceed the CAAQS or NAAQS for CO. However, as mentioned earlier in this section, a long-term operational mobile-source emission of CO does not have the potential to violate or contribute substantially to local concentrations of CO.

ODORS

As discussed in the 2011 General Plan EIR, cumulative development would not result in potentially significant impacts in terms of objectionable odors affecting a substantial number of receptors due to the type of land uses proposed.

Construction and operations of the land uses proposed under the proposed Project are required to comply with the goals and policies in the 2011 General Plan, proposed Project, and SCAQMD standards for reducing impacts from criterial air pollutants and overall cumulative impacts. The cumulative impacts of the proposed Project would be consistent with the cumulative impact conclusions identified in the 2011 General Plan EIR. The proposed Project would not result in a new significant impact or a substantial increase in the severity of a previously identified significant cumulative impact.

Mitigation Measures: No mitigation measures beyond the goals and policies identified in the 2011 General Plan, the proposed Project and Mitigation Measures AQ 1 – AQ 24 are available.

Level of Significance After Mitigation: The cumulative impacts of the proposed Project would be consistent with the cumulative impact conclusions identified in the 2011 General Plan EIR; Significant Unavoidable Impacts for construction and regional air quality, Less than Significant for localized air quality and cumulative odor impacts. The proposed Project would not result in a new significant impact or a substantial increase in the severity of a previously identified significant cumulative impact.

4.3.6 Significant Unavoidable Impacts

The proposed Project would result in a significant unavoidable impact for the following areas:

- **Short-Term Construction Emissions.** Project-related emissions (associated with future development and infrastructure projects facilitated by the proposed Project) are anticipated to exceed SCAQMD thresholds, construction-related emissions are considered significant unavoidable.
- **Long-Term Mobile and Stationary Source Emissions.** Full buildout of the proposed Project's land uses would cause emissions to exceed SCAQMD's recommended thresholds, thus violating air quality standards and would contribute substantially to an existing or projected air quality violation. Because the ambient air quality standards are established to be protective of public health, adverse health impacts to receptors are anticipated due to the project's



emissions being above SCAQMD's thresholds. Review of individual developments are anticipated under the proposed Project to determine whether potential air pollutant emissions generated from growth could result in a significant impact to air quality. The significance level of these impacts would be determined during review and appropriate mitigation measures would be developed. However, due to the magnitude of development and associated mobile and stationary source air quality impacts, impacts in this regard would be significant unavoidable.

- ***Cumulative Short-Term Construction and Long-Term Mobile and Stationary Source Emissions Impacts.*** Even with implementation of the proposed Project goals and policies, and mitigation measures described in this section, emissions from operations of future development associated with implementation of the proposed Project would potentially exceed the SCAQMD thresholds for criteria pollutants, resulting in a significant impact. In accordance with SCAQMD methodology, any project that cannot be mitigated to a level of less than significant is also significant on a cumulative basis.

All other air quality impacts associated with implementation of the proposed Project would be less than significant by adherence to and/or compliance with goals and policies in the 2011 General Plan and proposed Project and the Mitigation Measures listed above (AQ 1 – AQ 24).

4.3.7 Sources Cited

Ascent Environmental, Draft Technical Memorandum: Air Quality and Greenhouse Gas Impact Analysis, August 2019.

Iteris, Traffic Impact Analysis, August 21, 2019.

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City of Murrieta, City of Murrieta General Plan 2035, July 2011.

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